

molecules are aligned in a direction substantially vertical to the substrates when no voltage is being applied and axis-symmetrically aligned in each of a plurality of pixel

*b3* regions under application of a voltage, wherein a thickness ( $d_{in}$ ) of the liquid crystal layer in the pixel region is larger than a thickness ( $d_{out}$ ) of the liquid crystal layer outside of the pixel region, and the device includes a homeotropic alignment layer in a region corresponding to the pixel region on a surface of at least one of the substrates on the liquid crystal layer side.

*b3* 3. (Amended) A liquid crystal display device according to claim 1, wherein at least one of the substrates has convex portions defining the pixel region on a surface on the liquid crystal layer side.

22. (Amended) A liquid crystal display device, comprising:  
*b3* a pair of substrates and a liquid crystal layer provided between the substrates, wherein liquid crystal molecules in the liquid crystal layer have a negative dielectric anisotropy, and the liquid crystal molecules are aligned in a direction substantially vertical to the substrates when no driving voltage is being applied and axis-symmetrically aligned around an axis-symmetrical alignment central axis in each of a plurality of pixel regions under application of a driving voltage, and a convex portion defining each of the pixel regions is provided on a surface of at least one of the substrates on the liquid crystal layer side, and said convex portion includes a treatment for controlling a position of the axis-symmetrical alignment central axis.

24. A liquid crystal display device comprising:  
*b4*

a pair of substrates and a liquid crystal layer provided between the substrates, wherein liquid crystal molecules in the liquid crystal layer have a negative dielectric anisotropy, and the liquid crystal molecules are aligned in a direction substantially vertical to the substrates when no driving voltage is being applied and axis-symmetrically aligned around an axis-symmetrical alignment central axis in each of a plurality of pixel regions under application of a driving voltage, and a convex portion defining each of the pixel regions is provided on a surface of at least one of the substrates on the liquid crystal layer side, and said convex portion includes a treatment for controlling a position of the axis-symmetrical alignment central axis, and

each pixel region includes an Sa region in which the liquid crystal molecules keep a homeotropic alignment state under application of an axis-symmetrical alignment central axis forming voltage,

wherein the Sa region is an area of the pixel region in which the liquid crystal molecules keep a homeotropic alignment state under the application of the axis-symmetrical alignment central axis forming voltage, A is an area of the pixel region, and Sa/A satisfies the relationship  $0 < Sa/A < 4\%$ .

26. A liquid crystal display device comprising:

a pair of substrates and a liquid crystal layer provided between the substrates, wherein liquid crystal molecules in the liquid crystal layer have a negative dielectric anisotropy, and the liquid crystal molecules are aligned in a direction substantially vertical to the substrates when no driving voltage is being applied and axis-